



Figure 8. Sunscald (A) with deer feeding injury (B); undamaged root skin under the soil line (C). (PHOTO BY G. HOLMES)

cause stability problems when stacking. Likewise, transport over rough roads or excess movement at the curing and storage facility can result in additional damage. Although prompt and proper curing can help heal injuries, an injured sweetpotato will never regain its original appearance.

After roots are dug, they should be promptly loaded and moved to the storage facility. Otherwise, there is a risk of injury by sunscald or chilling, depending on environmental conditions. Sunscald (Figure 8), a physiological condition that causes a darkening or death of the skin, may result after as few as 30 minutes of exposure to bright sunlight. If sweetpotatoes are allowed to remain in bright sun for several hours, either before they are picked up or after they are placed in the pallet bin, they are almost sure to develop sunscald. Sunscald is unattractive and can be a site for postharvest decay. Some cultivars of sweetpotatoes are more susceptible to sunscald than others, and it is more conspicuous on light or flesh-colored cultivars.

Chilling injury becomes a concern during late-season harvests. Although sweetpotatoes freeze at about 30°F (1°C) and are immediately ruined, they are injured at temperatures below 50°F (10°C). The extent of the chilling injury is a function of both the temperature and length of exposure. For example, one hour at 40°F (4°C) may produce the same level of injury as five hours at 45°F (7°C). Chilling injury is also cumulative; one short episode below 50°F (10°C) may not produce any noticeable injury, whereas many short episodes may cause significant injury. Unharvested sweetpotatoes may not be harmed by a frost, depending on the temperature of the soil surrounding the roots. Harvest as soon as possible after frost has killed the vines to ensure that no injury occurs. Never leave harvested sweetpotatoes in the field overnight, as cooling may cause substantial injury. Damage caused by chilling may not appear for many weeks—or even several months—after the chilling occurs.

Chilling injury is expressed in many ways and can be difficult to diagnose. The most common symptoms are



Figure 9. Surface pitting caused by chilling injury. (PHOTO BY G. HOLMES)



Figure 10. Internal voids caused by dry matter loss. (PHOTO BY G. HOLMES)



Figure 11. Secondary *Penicillium* mold invasion following chilling injury. (PHOTO BY G. HOLMES)

surface pitting, greatly accelerated respiratory activity (dry matter loss), and an increase in susceptibility to decay (especially blue mold caused by *Penicillium* spp. See Figures 9 through 11). Other common symptoms include internal breakdown and voids, hardcore, failure to sprout, reduced culinary character (color, texture, taste, and aroma), and discoloration (darkening) of flesh when exposed to air. If chilling was severe, the roots may not exude latex when cut (Figures 2 and 3), or die and begin to decompose in storage.